

Seminar in Microbiology

Monday, December 14, 2015

Salle E07.3347.a, CMU

11:30 – 12:30



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Translational control of HIV

The broad aim of the research carried out in the laboratory is to study the elements that control translation, localization and assembly in viral systems. As a model system, we are working on translational control of retroviral RNAs and particularly that of lentiviral genomic RNAs (HIV-1, HIV-2, SIV and FIV). Over the past 5 years, we have gathered evidence that retroviral translation is controlled both by the 3D structure of the genomic RNA, notably by the presence of IRES sequences that direct entry of the ribosomes to the AUG start codon and by the interaction of viral proteins with the cellular translational apparatus; this also involves the study of micro RNAs (miRNAs) on both cellular and viral RNAs. More recently, we have also developed an expertise in cytoplasmic RNA localization during translation.

Panthu B, Mure F, Gruffat H, **Ohlmann T**. In vitro translation of mRNAs that are in their native ribonucleoprotein complexes. *Biochem J*. 2015 Nov 15;472(1):111-9.

Soto-Rifo R, Valiente-Echeverria F, Rubilar PS, Garcia-de-Gracia F, Ricci EP, Limousin T, Décimo D, Mouland AJ, **Ohlmann T**. HIV-2 genomic RNA accumulates in stress granules in the absence of active translation. *Nucleic Acids Res*. 2014 Nov 10;42(20):12861-75

Soto-Rifo R, Rubilar PS, **Ohlmann T**. The DEAD-box helicase DDX3 substitutes for the cap-binding protein eIF4E to promote compartmentalized translation initiation of the HIV-1 genomic RNA. *Nucleic Acids Res*. 2013 Jul;41(12):6286-99.

Ricci EP, Limousin T, Soto-Rifo R, Rubilar PS, Decimo D, **Ohlmann T**. miRNA repression of translation in vitro takes place during 43S ribosomal scanning. *Nucleic Acids Res*. 2013 Jan 7;41(1):586-98.

de Breyne S, Soto-Rifo R, López-Lastra M, **Ohlmann T**. Translation initiation is driven by different mechanisms on the HIV-1 and HIV-2 genomic RNAs. *Virus Res*. 2013 Feb;171(2):366-81.

Soto-Rifo R, Rubilar PS, Limousin T, de Breyne S, Décimo D, **Ohlmann T**. DEAD-box protein DDX3 associates with eIF4F to promote translation of selected mRNAs. *EMBO J*. 2012 Sep 12;31(18):3745-56.